## P13

**Opening wedge high tibial osteotomy in combination with anterior cruciate ligament-reconstruction**

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**Purpose:** Articular cartilage lesions generally do not heal, or heal only partially under certain biological and mechanical conditions. Important mechanical conditions are a proper alignment of the knee and sufficient stability. Especially high impact sport can cause a lesion of the anterior cruciate ligament (ACL). Chronic instability can lead to osteoarthrosis and some of these patients develop varus malalignment with narrowing of the medial knee compartment. Reconstruction of the ACL in presence of malalignment compromises the success of the operation, and instability re-occurs. Opening wedge high tibial osteotomy (HTO) has been shown to reduce pain and improve function in varus gonarthrosis. However, an HTO does only partially improve the stability. Therefore, for these patients, we combined the HTO with an ACL reconstruction. The goal of this study is to describe the primary results of the first 10 patients with a combined opening wedge HTO with the new Dynafix VS osteotomy system and a reconstruction of the ACL with hamstring tendons (Transfix-system).
**Methods and Materials:** One experienced knee surgeon performed 10 combined HTO-ACL procedures between January 2004 en August 2005. The HTO was placed using the medial approach with an incision of 5 cm and the ACL reconstruction was performed using the hamstrings technique. Proximal fixation with the Transfix-screw and distally with a bio-absorable screw (Arthrex, Naples, Florida, USA). To stabilize the osteotomy we used the Dynafix VS osteotomy system (Biomet Inc, Warsah, USA). Nine patients were active (age 32 - 50 years, 3 females and 7 males) and had a history of knee pain due to varus-medial compartmental arthrosis and instability (1 - 30 years) and 2 - 5 previous surgeries on the knee.
**Results:** The mean operating-time was 1 hour and 50 minutes (1.30 - 2.15). There was one technical error (over-valgisation). The operations were considered as challenging, but good to perform in reasonable time. During follow-up (6 - 30 month) all 10 patients showed excellent osteotomy healing. One patient had 5 degress of loss of correction, but had a good result. Nine patients had good to excellent pain relief and improvement of function with restoration of the stability. The mean alignment angle improved from a mean of 2.1 degrees of varus to a mean of 5.7 degrees of valgus. One patient had an overcorrection, but was satisfied and could return to work. One patient had a superficial infection after the initial operation (and also after removal of the hard-ware after one year). He was graded as a good result.
**Conclusions:** Concomitant HTO-ACL procedures showed promising short term results in patients with varus gonarthrosis and ACL instability. The operation was demanding, but well to perform by an experienced knee surgeon. All patients showed excellent osteotomy healing, whereas one patient had some loss of correction. One patient had an over-correction. One patient a superficial infection. Nine patients showed good/excellent results with pain relief, restored stability and function. Further studies are on-going to establish if this method also gives good long term results.

## P14

**Modern marker proteins in serum and synovial fluid in patients with different onset of knee osteoarthritis: Can we identify a "high risk" patient profile for incidence and rapid progression of knee osteoarthritis ?**

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**Purpose:** To identify on either those patients who will experience rapid progression of disease or those who will not.
**Methods and Materials:** 68 patients with advanced OA were randomized in patients with early onset of OA (<60 y), average onset for OA (60-70 y) and late onset of OA (>70 y). The KOOS was used to assess the patients` symptoms and function. Serum and synovial fluid samples were obtained and analyzed by ELISA for MMP-1, MMP-3, MMP-13, TIMP-1, TIMP-2, CPII and C2C. The degree of inflammation in the synovial tissue was assessed by the Histopathological Synovitis Score of Krenn.
**Results:** Histopathology: The early OA group demonstrated an inflammatory grade of 2 (moderate synovitis), whereas the average OA and the late OA group exhibited slight synovitis. Synovial fluid (SF) concentrations of MMP-1 and MMP-3 but showed no correlation with serum levels. MMP-13 was not associated with an early onset of OA. TIMP-2 levels in SF were significantly lower ($p<.05$) in the early OA group and revealed a ratio of 1.7:1 to MMP-1 and 1:40.3 to MMP-3. This ratio improved in the later OA groups. The CPII:C2C ratio was in the early and the average OA group around the half of that in the late OA group ($p<.05$). SF levels of C2C and CPII did not correlate with serum levels.
**Conclusions:** Increased MMP-1 and -3 and decreased TIMP-2 levels in synovial fluid showed a higher risk of early OA as well as synovitis grade 2, indicating a potential contribution of inflammatory mediators to an earlier onset of OA.

## P15

**Safety, efficacy and acceptability of flavocoxid (Limbrel™) compared with naproxen in subjects with osteoarthritis of the knee: a pilot study**

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**Purpose:** The present study was designed to compare the effectiveness and safety of Flavocoxid, a dual pathway inhibitor anti-inflammatory agent of botanical origin, to naproxen in a population of subjects with moderate-severe OA.
**Methods and Materials:** In this double blind study 103 Russian subjects were randomly assigned to receive either Flavocoxid (500 mg BID) or naproxen (500 mg BID) for one month. Outcome measures included the short WOMAC scale (validated in Russian) subject VAS scales for discomfort and global response, investigator VAS for global response and fecal occult blood.
**Results:** Both groups noted significant reduction in the signs and symptoms of knee OA. There were no statistically detectable differences between the Flavocoxid and naproxen groups with respect to any of the outcome variables ($p</=.001$) nor with respect to any adverse event although there was a trend toward a higher incidence of edema in the naproxen group.
**Conclusions:** In this short term pilot study Flavocoxid appeared to be as effective as naproxen in controlling the signs and symptoms of OA of the knee. A low incidence of adverse events was reported for both groups.